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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/470,343	12/22/1999	Bernardo Martinez-Tovar	P-1583	6032

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EXAMINER

CHAMBERS, TROY

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/470,343

Applicant(s)

MARTINEZ-TOVAR ET AL.

Examiner

Troy Chambers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6-9,11-18,35 and 36 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-9,11-18 and 35 is/are rejected.
- 7) ☒ Claim(s) 36 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Specification

1. The amendment filed 09/30/04 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material that is not supported by the original disclosure is as follows: a bridge section "substantially free of tungsten". "Substantially" is a broad term that modifies "free" and therefore does not preclude the addition of other materials. The specification does not disclose how or in what manner the bridge section is "substantially free" of tungsten. While the specification argues against bridges that are covered by tungsten alone, there is nothing in the specification that discloses substantially tungsten-free titanium.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 18 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by PCT Publication WO 9742462 issued to Martinez-Tovar ("MT"). MT discloses a semiconductor bridge device 10, comprising: a silicon or sapphire substrate 12 (pg. 11, ll. 29-30); an electrical bridge structure disposed on the substrate 12 (fig. 1), the bridge

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structure comprising a layer of semiconductor material; a base layer of titanium (pg. 10, lines 29-30) substantially free of tungsten on the bridge section and *disposed on the semiconductor material*; the bridge structure comprising a bridge section 14c extending between pad sections 14a/b; a pair of aluminum lands 16a/b (pg. 9, ll. 13-36); a pair of electrical leads 32 a/b; and, a capacitor connected to said leads 32 a/b (pg. 24, ll. 24-29). MT discloses a substrate comprises silicon with a silicon dioxide layer (pg. 8, ll. 16-21). MT discloses a substrate comprising sapphire (pg. 8, ll. 24-27). MT discloses a semiconductor bridge wherein the material having a negative coefficient of electrical conductivity comprises polycrystalline silicon (claim 18). For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355 ("PPG could have defined the scope of the phrase consisting essentially of for purposes of its patent by making clear in its specification what it regarded as constituting a material change in the basic and novel characteristics of the invention.").

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 6-8, 11, 13-15, 18 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. 4976200 issued to Benson in view of DE 19721929 issued to Weiss.

6. With respect to claims 1, 12 and 18, Benson discloses a semiconductor bridge conductor comprising a substrate 12; an electrical bridge structure comprising a bridge section 16 and pad sections (unnumbered in dotted lines in Fig. 1). The pads are larger than the bridge section. The pad and bridge sections each comprise a layer of metal 17 disposed on a layer of semiconductor material 20. A pair of conductive lands overly each pad section as shown in Fig. 1.

Benson does not disclose a layer of metal comprising titanium or pre-conditioned titanium. Weiss discloses a semiconductor igniter that including a hydrided titanium layer 2 hydrided at 350 deg. C (Abstract).

At the time of the invention, one of ordinary skill in the art would have found it obvious to provide the semiconductor bridge device of Benson with the hydrided titanium layer 2 of Weiss. The suggestion/motivation for doing so would have been to provide an igniter that has a lower energy transfer (Abstract) and in which the layer 2 can reliably function in the domain of a few millijoules (col. 1, ll. 34-47).

7. With respect to claim 2, Benson discloses lead wires 22.

8. With respect to claim 3, Benson discloses an electrical energy source 24.

9. With respect to claim 6, Benson discloses a substrate 18 comprising silicon dioxide.

10. With respect to claims 7 and 8, semiconductor bridge layer 20 comprises silicon.

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11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Benson in view of U.S. 4708060 issued to Bickes as applied to claim 1 above, and further in view of Bickes. Benson discloses the use of undoped silicon for use on the bridge layer 20 (col. 3, line 67- col. 4, line 1). Not disclosed is the use of crystalline silicon. Bickes discloses the use of polycrystalline semiconductor material (col. 5, ll. 9-37). At the time of the invention, one of ordinary skill in the art would have found it obvious to provide the ignitor of Benson with the polycrystalline silicon of Bickes. The suggestion/motivation for doing so would have been to optimize manufacturing costs benefits (col. 5, ll. 28-32).

12. With respect to claim 11, refer to col. 5, lines 30-37.

13. Claims 13 and 14 are method-of-making claims and not given patentable weight.

14. With respect to claim 15, refer to Fig. 1, in which lands 14 cover metal layer 17.

15. With respect to claim 35, Benson discloses a semiconductor material comprising silicon. Hence, it is assumed that the properties are inherently the same as claimed by the applicant.


Allowable Subject Matter

16. Claim 36 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Troy Chambers whose telephone number is (703) 308-5870. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Carone, can be reached at (703) 306-4198.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-4177. The fax phone number for the organization where this application or proceeding is assigned is (703) 306-4195.


MICHAEL J. CARONE
SUPERVISORY PATENT EXAMINER